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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/551,233   | 06/07/2006  | Yuichi Fukunaga      | 278687US0PCT        | 4292             |
| 22850  | 7590        | 09/11/2008           | EXAMINER            |                  |
| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.<br>1940 DUKE STREET<br>ALEXANDRIA, VA 22314 |             |                      |                     | AHVAZI, BIJAN    |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
|  |             | 1796                 |                     |                  |
|  |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|  |             |                      | 09/11/2008          | ELECTRONIC       |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/551,233             | FUKUNAGA ET AL.     |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Bijan Ahvazi           | 1796                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 30 July 2008.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 11-30 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ .  | 6) <input type="checkbox"/> Other: _____ .                        |

**DETAILED ACTION**

1. This action is responsive to the amendment filed on July 30, 2008.
2. Claims 11-30 are pending. Claims 1-10 have been cancelled. Claims 11-30 are newly added.
3. The rejection of claims 1, 2, 3, 4-6 under 35 U.S.C. 102(b) as being anticipated by Tsubouchi *et al.* (Pat. No. US 5,126,065) are withdrawn in view of Applicant's cancellation of these claims.
4. The rejection of claims 1, 2, 3, 4-8, 9-10 under 35 U.S.C. 103(a) as being unpatentable over Tsubouchi *et al.* (Pat. No. US 5,126,065) are withdrawn in view of Applicant's cancellation of these claims.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
6. Claims 11-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation "....wherein said liquid diene-based polymer is neither a liquid diene-based polymer of said norbornane, nor a liquid diene-based polymer of said norbornene" in

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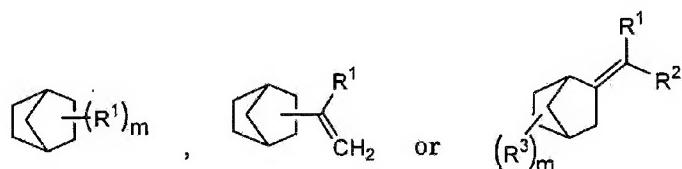
independent claim 11, lines 5-6, is nowhere supported in the specification and is therefore considered as new matter.

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 11-22, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789, 490) in view of Tsubouchi *et al.* (Pat. No. US 5,126,065).

9. The applicants claim an oil composition comprising: a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane and a norbornene; and a liquid diene-based polymer having a number average molecular weight of 300 to 100,000, wherein said liquid diene-based polymer is neither a liquid diene-based polymer of said norbornane, nor a liquid diene-based polymer of said norbornene wherein said hydrogenation product of a monomer to a tetramer of at least one compound of said norbornane is present within said oil composition and is represented by any of the following general formulae



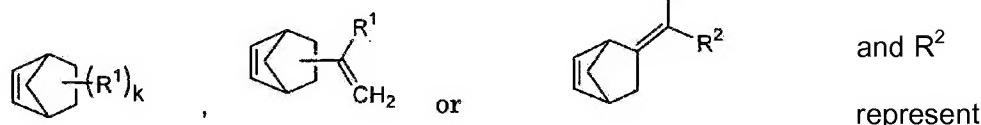
wherein  $R^1$ ,  $R^2$  and  $R^3$  each represent hydrogen atom or an alkyl group having 1 to 10 carbon atoms and  $m$  represents an integer of 1 to 3, wherein said norbornane is selected from the

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group consisting of vinylnorbornane, methylenenorbornane and ethylidenenorbornane and wherein the norbornenes are represented by any of general formulae:

wherein R<sup>1</sup>

each



and R<sup>2</sup>

represent

hydrogen atom or an alkyl group having 1 to 10 carbon atoms, and k represents an integer of 1 to 3, wherein said norbornene is selected from the group consisting of methylnorbornene, ethylnorbornene, isopropynorbornene, dimethylnorbornene; vinylnorbornene, isopropenynorbornene, methylenenorbornene, ethylidenenorbornene and isopropylidenenorbornene.

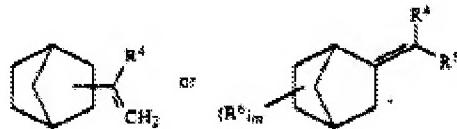
Toshiaki Tanaka discloses an immersion oil composition for microscope comprises a

liquid dienic polymer, e.g. liquid polybutadiene, as a first component and, as a second component, one or a combination of compounds including (a) chlorinated paraffins, (b) polybutene, (c) carboxylic acid esters, (d) liquid paraffins, (e) saturated aliphatic alcohols and (f) alicyclic alcohols; said composition having a refractive index in the from 1.501 to 1.519 and a Abbe's number in the range from 40 to 46 (Col 1, line 55). The term "polybutene" implied here means homopolymer of 1-butene, trans-2-butene, cis-2-butene or isobutylene, or copolymer of said monomer with other monomer and the polymerization products of a mixture of said monomers are also included in the copolymer (Col 2, line 42). The first component in the immersion oil composition is a liquid dienic polymer exemplified by liquid polybutadiene, liquid polyisoprene, liquid polychloroprene and the like, of which liquid polybutadiene is particularly preferable. The liquid dienic polymer should preferably have a number-average molecular weight in the range from 500 to 20,000 or, more preferably, from 1,000 to 15,000

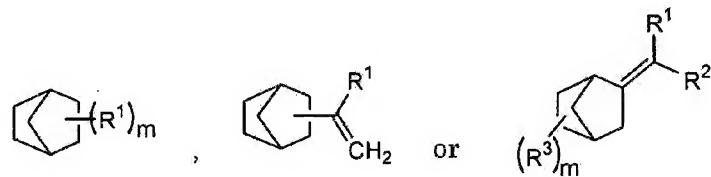
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(Col 2, line 19) and within said oil composition in an amount of different formulation parts by weight within the instant applications' limitation claims as shown in Table I (Col 5, Col 7, Col 9, and Col 11) corresponding to the instant applicants' limitation claims 11, 16, 17, 18, 19, 20, 21 and 30. However, Toshiaki Tanaka fails to disclose a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane and a norbornene.

Tsubouchi *et al.* discloses a process for improving the coefficient of traction at high temperatures in a traction drive, and a traction drive fluid. The traction drive fluid comprises the hydrogenated product of a dimer, a trimer or a tetramer of norbornanes and/or norbornenes, and exhibits traction performance over a wide temperature (Abstract & Page 19, Claims 2). Preferred norbornanes among them are those represented by the general formula:



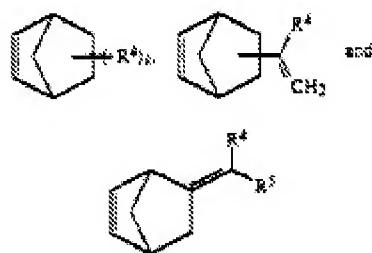
wherein the selected compounds from the instant application are represented by any of the general formula:



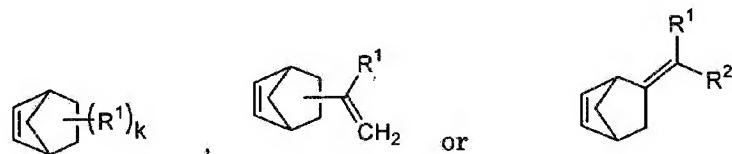
wherein, R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> in the reference are each a hydrogen atom or an alkyl group having 1 to 3 carbon atoms, preferably , R<sup>4</sup>, R<sup>5</sup> and R<sup>6</sup> are each a hydrogen atom or a methyl group, and m is an integer 1 or 2. Specific examples of such norbornanes are alkenylnorbornanes such as

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vinylnorbornane, and isopropenylnorbornane; alkylidenenorbornanes such as methylenenorbornane, ethylenenorbornane, isopropylidenenorbornane, 3-methyl-2-methylenenorbornane, and 3, 3-dimethyl-2-methylenenorbornane (Page 3, lines 54 & Page 19, Claim 3). The preferred norbornenes are those represented by the general formula:



wherein the selected compounds from the instant application are represented by any of the general formula:



wherein, R<sup>4</sup> and R<sup>5</sup> in the reference are as defined above and k is an integer of 1 or 2. Specific examples of these norbornenes include alkynorbornenes such as methylnorbornene, ethylnorbornene, isopropynorbornene, and dimethylnorbornene; alkenynorbornenes such as vinylnorbornene, and isopropenynorbornene; alkylidenenorbornenes such as methylenenorbornene, ethylenenorbornene, and isopropylidenenorbornene (Page 4, lines 4 & Page 19, Claims 4). In the hydrogenation process as in the reference discloses dimerization, trimerization, and tetramerization, a solvent that can be used include most of the liquid saturated hydrocarbons (Page 5, line 62) such as n-pentane, n-hexane, heptane, octane,

nonane, decane, dodecane, cyclopentane, cyclohexane, and methylcyclohexane. In addition, liquid compounds among aromatics (Page 5, line 68), olefins, alcohols, ketones, and ethers can also be utilized. Particularly suitable are saturated hydrocarbons. Some specific examples of the liquid diene are disclosed in some of the examples of Tsubouchi *et al.* (Page 10, example 9, and line 44) that corresponding to the instant applicants' limitation claims 11, 12, 13, 14, 15, and 22.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an immersion oil composition for microscope by Toshiaki Tanaka with a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane and a norbornene as taught by Tsubouchi *et al.* in order to that the resultant mixture may have properties suitable for an immersion oil for microscope including the dispersive power of light, refractive index, viscosity and others.

10. Claims 23-25, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789,490) and Tsubouchi *et al.* (Pat. No. US 5,126,065) as applied to claim 1- 22, and 30 above, and further in view of Hans-Joachim Weippert (Pat. No. US 5,817,256).

11. Toshiaki Tanaka and Tsubouchi *et al.* disclose the features as discussed above, but fail to disclose the oil composition wherein said aromatic ester is present within said oil composition and is an ester of phthalic acid. Hans-Joachim Weippert discloses an immersion oil for microscopy. The immersion oil includes an ester or ether with tricyclodecane (TCD) structure as a main constituent and one or more high-boiling liquids as minor constituents. The immersion oil is free of halogens and exhibits a high UV-transmissibility and is characterized by

low intrinsic fluorescence because the components utilized can be vacuum distilled (Col 1, line 40). The TCD-methyloesters or di-(TCD-emethylol)esters can be synthesized via esterification of these alcohols with dicarboxylic acids such as phthalic acid, isophthalic acid, terephthalic acid, malonic acid, succinic acid, malic acid, glutaric acid, adipic acid or sebacic acid in accordance with conventional esterification methods (Col 2, line 33). As further components for adjusting the refractive index, butyl benzyl phthalate and/or di(propyleneglycol-1, 2) dibenzoate can, for example, be added (Col 2, line 44) and wherein said aromatic ether is present within said oil composition and is selected from the group consisting of dibenzyl ether with 11.5 weight % (Col 7, Table II, Example 7), which corresponding to the instant applicants' limitation claims 23, 24, 25, and 29.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an immersion oil composition for microscope by Toshiaki Tanaka and a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane and a norbornene by Tsubouchi *et al.*, with aromatic ester and ether as taught of Weippert, in order to that the resultant mixture may have properties suitable for an immersion oil for microscope including the dispersive power of light, refractive index, viscosity and others.

12. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toshiaki Tanaka (Pat. No. US 4,789,490), Tsubouchi *et al.* (Pat. No. US 5,126,065), and Hans-Joachim Weippert (Pat. No. US 5,817,256) as applied to claim 1-25, 29-30 above, and further in view of Hei *et al.* (Pub. No. US 2003/028996 A1) and Hull *et al.* (Pub. No. US 2004/0123516 A1).

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13. Toshiaki Tanaka, Tsubouchi *et al.* and Hans-Joachim Weippert disclose the features as discussed above, but fail to disclose the oil composition wherein said aromatic alcohol is present within said oil composition and is phenylethanol, and wherein said aromatic ketone is present within said oil composition and is selected from the group consisting of acetophenone, propiophenone, benzophenone and combinations thereof, and wherein said aromatic hydrocarbon is present within said oil composition and is selected from the group consisting of triisopropylbenzene and t-butylxylene.

Hei *et al.* discloses a method for antimicrobial treatment comprising applying to microbes a composition containing a diluting solvent (e.g., water), an antimicrobially-active solvent having a density different from the density of the diluting solvent, and an optional cosolvent, surfactant, or additional antimicrobial agent, wherein the amount of antimicrobially-active solvent or additional antimicrobial agent is sufficiently high and the amount of cosolvent or surfactant is sufficiently low so that the composition will provide greater than a 1-log order reduction in the population of bacteria or spores of *Bacillus cereus* within 10 seconds at 60°C (Page 1, ¶0009). Preferred antimicrobially-active solvents having a density different from that of water include acetophenone and phenylethanol (Page 4, ¶0029) which corresponding to the instant applicants' limitation claims 26 and 27.

Hull *et al.* discloses a method for making a fuel for a modified spark ignition combustion engine, a fuel for a modified spark ignition combustion engine and a fuel additive for a conventional spark ignition combustion engine (Page 2, ¶0028). An individual hydrocarbon selected from a C<sub>6</sub>-C<sub>12</sub> fraction of aliphatic or alicyclic saturated and unsaturated hydrocarbons can be used as component which is selected from isopropylbenzene, isopropyltoluene,

diethylbenzene, isopropylxylene, tert-butylbenzene, tert-butyltoluene, tert-butylxylene (Page 6, ¶0084) which corresponding to the instant applicants' limitation claims 28.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided an immersion oil composition for microscope by Toshiaki Tanaka with a hydrogenation product of a monomer to a tetramer of at least one compound selected from the group consisting of a norbornane and a norbornene as taught by Tsubouchi *et al.*, aromatic ester and ether of Weippert, aromatic alcohol and ketone of Hei *et al.*, aromatic hydrocarbons of Hull *et al.* in order that the resultant mixture may have properties suitable for an immersion oil for microscope including the dispersive power of light, refractive index, viscosity and others. Other properties important in immersion oils for microscope include anti-volatility, low fluorescence emission, anti-weatherability, and clearness, resolving power, chromatic aberration and absence of corrosiveness, i.e. inertness to any body in contact therewith.

#### ***Response to Arguments***

14. Applicant's arguments with respect to claims 11-30 have been considered but are moot in view of the new ground(s) of rejection.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Examiner Information***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bijan Ahvazi, Ph.D. whose telephone number is (571)270-3449. The examiner can normally be reached on M-F 8:0-5:0. (Off every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Y. Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BA/  
Bijan Ahvazi, Ph.D.  
Examiner  
Art Unit 1796

/Lorna M Douyon/  
Primary Examiner, Art Unit 1796

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